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ARTIFICIAL KIDNEYS

Dialysis meets the need

Four children under age 7 have undergone successful kidney transplants at UC Hospitals. Pauline Casey, 2, above, is on dialysis while awaiting a transplant.

Less than 10 years ago, kidney transplant surgery was considered a radical form of treatment. And artificial kidneys – dialysis units that filter toxic wastes from the bloodstream – were labeled "either-or" measures.

Listen to what Dr. Malcolm Holliday, professor of pediatrics at UC Medical Center and head of the children's kidney unit at UC and S.F. General Hospital dialysis center, has to say:

"In the past couple of years, dialysis and transplants have come to be considered complementary – not radical and not either-or."

Artificial kidneys are capable of holding most adults with a low mortality rate for an extended period. There are sometimes restrictions on diet or activity, and there can be complications in the human being-machine "hookup." A few people don't do well, but most do fairly well, Dr. Holliday reports.

"People on dialysis develop an amazing esprit de corps," he has found. "They can help each other more than anyone else can."

Age is no factor in this unique camaraderie, for not only adults but youngsters in their teens and tots under 4 years receive the gift of life through dialysis. It is with youngsters that Dr. Holliday is especially concerned.

The dialysis center at S.F. General Hospital covers a 4000-foot area, has 10 patient beds and a master kidney machine that provides simultaneous dialysis service for up to eight patients.

(continued on page 3)

This bank's assets are measured in milligrams

In the modest basement office of a building on Third Avenue is the administrative headquarters for a unique medical "bank" whose assets are measured in milligrams.

The administrator – call him director – of this Pituitary Bank of UC Medical Center in San Francisco is handsome, affable Dr. Roberto Escamilla, clinical professor of medicine.

In his director's role, Dr. Escamilla is concerned with pituitary gland "assets" which are singly the size of a pea when acquired and are quite literally priceless.

"Each pituitary gland must be donated. No charge is made for the hormone," according to Dr. Escamilla, who reports that 10 carefully chosen patients have been treated with growth hormones from pituitary glands in the eight years the bank has been functioning.

Ten patients may not sound an impressive number, but it is 10 more children, dwarfed because of glandular or developmental deficiencies, than would have been helped had the bank never been founded.

"The treatment of each requires a tremendous amount of hormone," Dr. Escamilla points out. "For 10 doses, 50 milligrams of the pituitary's growth hormone is needed. Each gland produces only a single dose.

"We hope that a synthetic hormone will be produced soon, perhaps this year or next. Work on this is going on now in Dr. C. H. Li's laboratory at the Medical Center here."

It was Dr. Li who made major strides in this area of research by clarifying the molecular structure of the pituitary growth hormone.

Right now, the Pituitary Bank has 1500 donors signed up. Over the years, more than 30,000 pituitary glands have been turned over to Dr. Li in the Hormone Research Laboratory where studies were made of the structure and where growth hormone is prepared for clinical trials.

Donations have come from dozens of hospitals in the Bay Area, from 11 states, from as far away as Brazil, Hong Kong, Manila, Mexico, Panama and Greece.

"I gave a talk in Hong Kong in 1963, and we've been receiving donated glands from there ever since," Dr. Escamilla says.

Glands must be kept frozen and are usually shipped in dry ice—by speedy jet for long hauls or by local bus lines when the source is nearby.

Red Cross Motor Service volunteer drivers handle pickup and delivery of shipments to the Medical Center.

"When we announced the founding of the bank, a tremendous flood of letters came in from all over the world. Most of them started out 'I have a child . . . cost is no object' or 'I have a patient.'

"We answered them all, but of course, the answers had to be in the negative."

Decisions on accepting cases are made by the Growth Hormone Committee. Members include Dr. Escamilla, Dr. William Deamer, Dr. Jonathan Dixon, Dr. Peter Forsham, Dr. Ned Whitcomb.

"We choose cases carefully, because we must prove something by treatment. We have selected various categories and accepted cases in each category," Dr. Escamilla explains.

"There is pituitary dwarfism, for instance. This usually hangs on a lack of development of the gland and isn't necessarily familial.

"We prefer to treat young children. There is a natural spurt of growth at puberty, and this obscures the interpretation, as far as we are concerned.

"If we begin treatment at age 4, 5 or 6, it gives us several years of observation before sexual maturity and the growth spurt."

The degree of success from treatments has been encouraging. "This hormone seems to work better than any other method of treatment. It is given by injection," according to the physician, "sometimes daily, sometimes three times a week."

Dr. Roberto Escamilla
Pituitary Bank director

Until a synthetic growth hormone is developed, the number of dwarfed children whose condition is caused by hypopituitarism – estimated at 3000 to 7000 in this country – will continue to exceed the available supply of hormone.

Such a child might be an 8-year-old girl who is the size of a normal 3-year-old.

According to the National Pituitary Agency, the number of glands required for treatment is "staggering... amounting to at least the supply from nearly three-fourths of the annual deaths in the United States."

From treatments such as those conducted at UC Medical Center, it has become apparent that: hypopituitary dwarfs can grow for years; other types of dwarfs may respond to treatment, too; therapy has no dangerous effects; most important, however – there isn't enough hormone.

Anyone interested in donating to the pituitary bank may obtain information from UC Pituitary Bank, UC Medical Center, San Francisco 94122. Mrs. Doris E. Snow is executive secretary. ◄

DIALYSIS

'They help each other'

(Cont. from page 1)

Who is treated at a dialysis center? There are two types of patients – those "in training" on portable, home-type units, who will leave when they have completed their instruction and continue treatment at home, and those awaiting kidney transplants. The latter remain in the center until a donor can be found or a cadaver transplant is performed.

In a two-year period, there have been 21 kidney transplants performed on youngsters aged 16 or less at UC Hospitals, first under Dr. John Najarian and now under Dr. F. C. Belzer and Dr. Samuel Kountz. Of the 21, 19 survive. To date, four children under age 7 have undergone successful transplants.

Many of these youngsters had acute dialysis at UC for two to six weeks before transplant.

"Perhaps our star was Jennifer Sawyer, who is now 4. She had both kidneys removed for cancer, and her first transplant failed," Dr. Holliday says. "Her second transplant was completed a few months ago after six weeks of dialysis, and she's home now in North Carolina."

The youngest child ever put on dialysis is 2 year old Pauline Casey, daughter of the Paul Caseys. She also has had both kidneys removed for cancer and has been on dialysis for six months. She will continue to be until a donor is found.

What happens to children who must rely on a machine for survival? "I would surmise that children on dialysis – and they range in age from 10 to early teens, except for our 2-year-old – handle the situation with less personality change than adults," Dr. Holliday believes.

Says Dr. Donald Potter of the dialysis center: "In a few children, the change can be dramatic. Perhaps a shy, defiant child from an underprivileged background and a home that lacked affection will actually blossom out in a hospital situation.

Dr. Malcolm Holliday, right, and Dr. Duane Larsen at the Dialysis Center

The situation in the dialysis center is remarkably congenial. Somehow, they become special people in the hospital."

Dialysis – and who should have it – still provokes some controversy. Neither Dr. Holliday nor Dr. Potter believes in "selecting" patients. Their philosophy: If a patient wants the treatment and can benefit, he should be treated.

"But some people feel that since our facilities here are so limited, poor risks should be excluded," Dr. Holliday points out. "With young children, dialysis amounts to conducting an experiment to see what quality of life can be provided for them, at what cost and for how long.

"Now, we anticipate all of them eventually will receive a transplant of the right type with a good chance for success."

Dialysis is not inexpensive. The first year costs a patient about $13,000 which includes the $5,000 to $6,000 price of the machine. Subsequently, annual costs are about $2,000.

Unfortunately, all children who might benefit from dialysis aren't able to obtain it. "The center can take perhaps four new patients a month, both adults and children. We don't have the capabilities to treat everyone. We need space and skilled workers."

The center has been generously helped by a grant from Northern California chapter, National Kidney Foundation, and by Independent Shell Oil Dealers, who sponsored a fund-raising project for patients.

With all the limitations, Dr. Holliday and his colleagues are determined to "push open the age door to see that dialysis won't turn out to be 'experimental' for children."

There are already success stories – 19 children alive after transplants and four on dialysis awaiting transplants. Two little sisters thrived on short term dialysis until they acquired one kidney each from one grandmother each. All four are doing fine.

Then there is small Jennifer, already home in North Carolina after two transplants and dialysis.

And there is 10-year old Archie Graham, who was maintained on dialysis for a year at home – and continued to attend school. He has now had a successful transplant and is back with the rest of his classmates – having kept up all the way along. ◄

Research in rheumatic diseases

It is only within the last 10 years that one of the commonest chronic disabling ailments in the United States — rheumatic disease — has aroused anything but profound indifference and lethargy in medical circles in general.

Things have changed. According to Dr. Ephraim P. Engleman, clinical professor of medicine and head of the rheumatic disease group at UC Medical Center in San Francisco:

"More and more doctors are becoming interested in the rheumatic disease field."

Why? Dr. Engleman says a major stimulus was establishment of the National Institute of Arthritic and Metabolic Diseases, supported by federal funds and oriented chiefly toward laboratory research and training. But also of major importance — the discovery of the drug, cortisone.

"I know of no drug," he says, "that has created the impact cortisone has. It has produced enormous interest in rheumatic diseases."

Another interest-triggering factor: recognition of the possibility that many arthritic diseases are somehow related to an aberration in the immunologic mechanism and that arthritic diseases seem to have immunologic overtones.

It was a conference called in 1965 by the Surgeon General that proved an important turning point in the thinking of policy makers, Dr. Engleman believes. Concentration since then has been largely directed toward patient care and clinical research instead of toward laboratory research.

There are many kinds of arthritis, Dr. Engleman points out, perhaps 50 to 60 different varieties of the disease which most often concern medical people.

"I prefer to use the term 'rheumatic diseases'," the UC faculty member says. "When lay people talk about arthritis, they usually are referring to rheumatic arthritis."

At UC Medical Center, research on the concept of immunologic mechanism is going forward. One of the most "exciting things," according to

From the lab: 'a new approach'

Dr. Engleman, has been identification by Dr. Julius Schachter of evidence of infection related to what is called the Bedsonia group of organisms in patients with certain types of arthritis.

"This is exciting because it was not previously known. There has been recognition of the presence of these organisms in certain types of animal arthritis. It was known that sheep, for instance, developed arthritis and an eye disease called conjunctivitis and that the Bedsonia organisms could be recovered from these diseased sheep."

In another form of human arthritis called Reiter's syndrome, there appears to be an association with urethritis and also with conjunctivitis. Dr. Schachter has found evidence of infection by isolating Bedsonia organisms from the urethra, eye and, or joint or by serologic tests in 25 to 30 percent of patients studied so far.

In line with these discoveries, an organism isolated from a patient's diseased knee was injected into the knees of a monkey and a rabbit. The monkey developed arthritis. The rabbit also developed arthritis — and showed evidence of conjunctivitis, too.

Says Dr. Engleman: "These discoveries and developments are exciting, because they may open up a whole new approach to arthritis."

How? By reopening the whole question of the relationship of infection to arthritis. Bedsonia organisms, for instance, are tiny bacteria.

Is there a possibility that people might someday be inoculated against rheumatic diseases? "There is a possibility," Dr. Engleman believes, "IF and WHEN we can be sure that the cause of a given form of arthritis is actually a specific organism."

Right now, no one knows for sure what causes rheumatoid arthritis. Nor is there a drug that will "cure" any form of arthritis, except for proven, infectious arthritis where antibiotics prove effective.

"There are several anti-inflammatory agents," Dr. Engleman points out, "but aspirin when properly used is effective and safe. The hitch here is that the physician who prescribes salicylates does not always prescribe a large enough dose. Three aspirins — what you might take to relieve a headache—have no anti-inflammation effect.

"You must use large doses, perhaps up to 15 and 18 aspirin daily. A ringing in the ears is a signal of an optimum dose,"

There is evidence, he adds, that if inflammation is suppressed, the crippling effects of the disease are slowed down.

"This is where the importance of early diagnosis comes in, especially in a disease like rheumatoid arthritis," the physician points out.

"I don't know of any field where there is greater need for public education than in the field of arthritis. Much can be done for patients, but so many people are indifferent or apathetic or simply believe they have to suffer through it."

Is treatment expensive? "No, not really," Dr. Engleman contends. "But if a patient doesn't seek treatment and then has to leave his job, that IS expensive. But the drugs are no more expensive than those used to treat other diseases and may eventually cost less."

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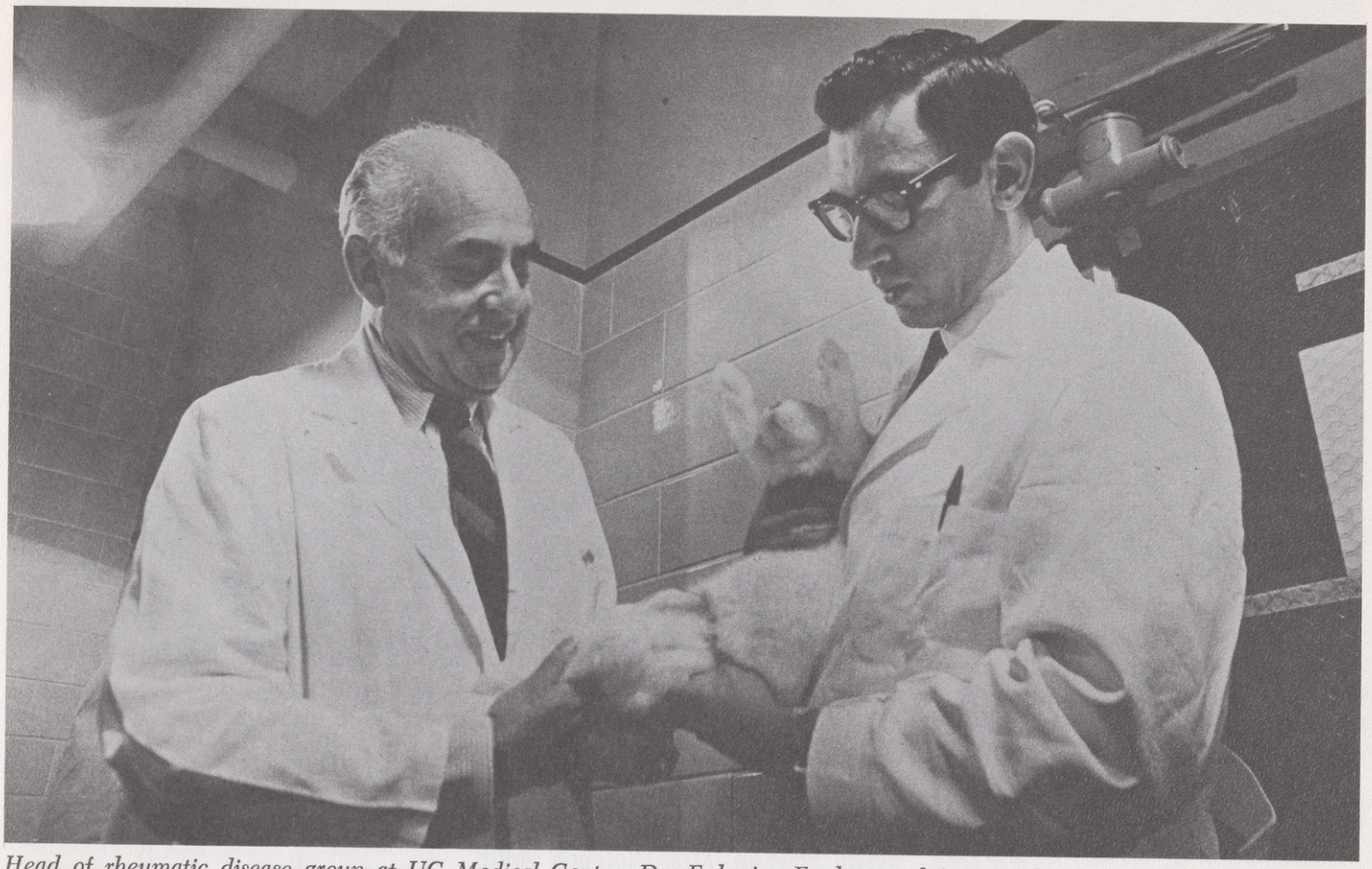


Head of rheumatic disease group at UC Medical Center, Dr. Ephraim Engleman, left, consults with Dr. Julius Schachter.

RHEUMATIC

(Continued from page 4)

Another problem in treatment, especially of rheumatoid arthritis, is that the more potent the medication and the more efficacious its anti-inflammation effects, the more likely it is to produce side effects.

"Take the discovery of cortisone," Dr. Engleman points out. "The word gets out that it's a miracle. It's abused because so little is known about it. Then there is increasing evidence of side effects. This produces a wave of pessimism in patients and physicians. People begin to fear the drug."

This is a cycle that "we go through with all new drugs," the UC faculty member believes. If side effects are related to dosage – and they seem to be – then physicians must learn the proper dose for each patient. And each one may be different.

"We can say that a great deal CAN be done. We may not literally cure a rheumatic disease, but we can arrest its progress and halt the crippling effects of arthritis," Dr. Engleman concludes. ◄

Did you know that . . .

Victims of arthritis and related rheumatic disease number more than 13 million. According to a recent health survey, the cost of arthritis to the people of the United States is approaching $2 billion a year.

Here are some facts and figures from the Arthritis Foundation.

Q. What is arthritis?

A. Strictly speaking, the word "arthritis" means an inflammation of a joint. However, the word has become a popular name for a number of conditions that cause aching and pain in and about joints, regardless of underlying causes.

Q. What is rheumatism?

A. This word does not have a precise definition. It is used to describe several conditions that affect joints or muscles in some manner. Like arthritis, rheumatism may have a number of different causes.

Q. What is rheumatoid arthritis?

A. Of all major forms of arthritis, rheumatoid arthritis is undoubtedly the most painful and most crippling. It is a chronic, inflammatory disease, primarily of the connective tissue that affects the entire body. Its most usual point of attack is the joints and the tissues around them.

Q. What causes rheumatoid arthritis?

A. No one knows. There are two theories, but neither of them has been proved. Some scientists believe that rheumatoid arthritis may be due to an infection of some kind. And many scientists think rheumatoid arthritis is caused by a derangement of the body's own defense mechanism, that in some way the body's chemistry is thrown out of kilter so the body attacks its own joints and tissues.

Thank-you tea

Pins awarded volunteers

In July, the men and women who devote time and energy to the demanding and rewarding task called "volunteering" established a first for the UC Hospitals.

Together, they gave a total of 4000 hours in performance of a multitude of assignments. This was the highest number of hours reached since the establishment of the UC Hospitals Auxiliary eight years ago.

And on Oct. 12, the big-hearted volunteers themselves received a big thank-you from the auxiliary members at the annual Recognition Tea. The occasion climaxed Recognition Week and was held in Millberry Union under the chairmanship of Mrs. Francis Sooy.

Presentation of service award pins from the auxiliary was the highlight of the day. Adult volunteers who were honored include:

8000 hours: Mrs. Belle Brown; 3000 hours, Mrs. Millie Dunow; 2000 hours: Rebe Brittan, Mrs. Rose Raineri; 1000 hours: Mrs. Mildred Baird, Marilyn Cereghino, Mrs. Freda Farber, Mrs. Mae Gallant, Mrs. Doris Jessee, Mrs. Anna Maurer.

In the 500-hour award category were: Mrs. Grace Brockman-Hanssen, Edith Catelli, Mrs. Nina Chern, Mrs. Hazel Datwyler, Mrs. Emma Kahn, Mrs. Edith Suit, Mrs. Agnes Seaton, Mrs. Mina Wolf.

Volunteers who achieved the 100-hour awards were: Mrs. Frances Brodie, Mrs. Dorothea Cohn, Mrs. Verna Decker, Mrs. Fidela Dominguez, Mrs. Barbara Doubleday, Bertha Fernandez, Mrs. Wendy Free, Mrs. Betty Goldman, Mrs. Gertrude Goldman, Mrs. Gladys Graykowski, Theodra Hahlbeck.

Other in the 100-hour category were Mrs. Marcia Holcomb, Josephine Hopkins, Suann Hosie, Mrs. Dorothy Howland, Mrs. Jeanette Kahn, Mrs. Darlene Klaif, Camille Kozlowski, Velma Landmann, Mrs. Eva Lowe, Mrs. Marcia Patt, Mrs. Josephine Quillinan, Mrs. Virginia Ralph, Mrs. Tana Rudolf.

Volunteers are honored annually at the UC Hospitals Auxiliary tea.

Also receiving 100-hour pins were Sylvia Serrahn, Mrs. Florence Smith, Kathryn Sobel, Marjorie Stauffer, Margie Stevens, Marilyn Strange, Rosemary Sullivan, Mrs. Christine Thisted, Mrs. Marlene Wheeler, Frederick Willwerth, Mrs. Anna Zidek.

Student award pins for 100 hours of volunteer service went to: Roy Blydenstein, Tom Bittner, Joan Curtin, Michael Colton, Glynis Evans, Marilyn Jaffe, Marsha Kramar, Jenny Lee, Debbie Lentz, Jim Mahoney, Denise Mears, William Meraz, Vickie Robinson, Dale Trahan, Charles Wood.

For 50 hours, student pins were presented to: Elizabeth Avilla, Curtis Bell, Renee Bonnifield, Denise DuBay, Merrie Foster, Marianna Fujii, Diana Gross, Edith Hayes, Pat Kovach, Karen Lindfors, Marguerite Longtin, Esther Louie, Diana Porter.

Other students who received 50-hour awards were Maureen Marymee, Kathleen Ramirez, Connie Maes, Ann Scott, Esther Stier, Marylee Tarkington, Cathy Wake, Gayle Wasserkrug.

Among volunteers who were unable to attend the tea but who received award pins were George Martin, 50 hours; Jeffrey Donat, Jay Levin, Sheldon Levin, Kathleen Edwards, Julie Hitterdale, Mrs. Carole Martinelli, all 100 hours. ◄

Assignments pop up here, there and everywhere

How did volunteers put in their record-breaking 4000 hours of service in July? Listen to this:

- They staffed the shop-on-wheels, which carries candy, magazines, stamps and gift items to patients in wards and in private rooms. And they staffed the gift shop in the lobby of Moffitt Hospitals for long hours every day.

- They wrote letters for patients, ran countless errands, read aloud, helped care for bouquets and just plain talked and listened to lonely, bedridden patients.

- They tucked books into the library cart and wheeled it for miles through the corridors.

- In pediatrics, they assisted with the play program, helped feed and entertain tots, who are often frightened and bewildered.

- They also assisted co-ordinator of volunteers Sue Carlisle and the UC Hospitals Auxiliary office by performing clerical tasks.

- And in the hospitals, they acted as aides and hostesses in admissions, assistants in radiation therapy, radiology and outpatient clinics. ◄

ON UC CAMPUSES

New building plans meet future needs

In seven short years, the nation will need 108,000 more physicians than it has today.

Demands for trained manpower and womanpower are skyrocketing, too, in dentistry, nursing, pharmacy and the multiple medical sciences and technologist that will be required to meet the health care needs of more than 200 million Americans.

In seven short years, health will be the nation's Number One industry. And 1½ million more health workers will be needed.

To meet mushrooming needs, the University of California is expanding its facilities and capabilities on several campuses. At the Medical Center in San Francisco, a new clinics building will be under construction by next month. New nursing and dental schools are on the drawing boards.

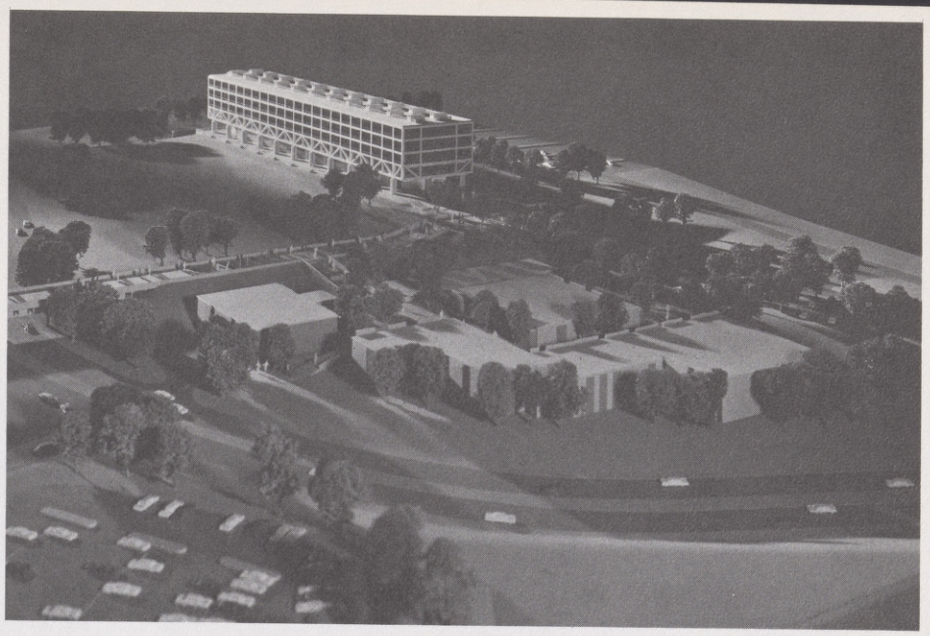
Already, the University of California is 13 percent overloaded with students, by 1972 will be 20 percent overloaded. These estimates come from the Coordinating Council for Higher Education.

In a race to keep up with the student population explosion and with growing demands for high quality medical care, three new medical schools are either operating or in the final planning stages on campuses other than San Francisco and UCLA.

At Davis, for instance, classes started last month in a new, single story, $1.3 million medical school. There are 74 faculty members and 48 freshmen students.

Planning for the Davis Medical School began in 1965 and faculty recruitment in 1966. When classes began in September of 1968, Dean of Medicine Charles J. Tupper called it "instant medical school."

The continuous four year course — no summer vacations — will underline solving medical problems instead of rote learning of symptoms and treatments, according to Dr. Hamilton S. Davis, curriculum chairman.



When this College of Medicine $14 million building is completed on the Irvine campus of UC in 1972, it will accommodate 250 students.

At UC's Irvine campus, construction of a five story, $14 million building to house the college of medicine will be completed in 1972. It will accommodate more than 250 medical students and 109 medical faculty, according to Warren L. Bostick, M.D., dean of the college of medicine.

At UCLA Center for Health Science, an expansion program will result in the increase of bed capacity from 500 to 1000. The outpatients clinics are also being expanded to permit an upswing in patient load. And this mushrooming growth of facilities allows the medical school to jump its enrollment from 66 to 128 per class. That is presently the class limit at the San Francisco campus for medical school students.

On the San Diego campus, 39 men and eight women began classes in the new school of medicine in September. Still to be completed there is the new $15 million basic science building, first construction project in the school of medicine complex.

Already approved by the University Board of Regents is the design for the second construction project for the San Diego campus' school of medicine — a clinical science building. This $7 million structure is expected to be ready by the fall of 1971 — depending on the passage of Proposition 3 on the November ballot. ◄

Classes began in the new school of medicine on the San Diego campus of UC in September with an enrollment of 39 men and eight women.

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What about Proposition 3

Just what is Proposition 3 on the November ballot?

It calls for $250 million in State bonds to construct state college, university and urban school facilities. Of the total, $200 million is designated for higher education and $50 million for urban schools.

Funds will only be used to replace or rehabilitate ghetto schools built before 1943. In each instance of new building, the State Allocation Board must certify that rehabilitation of existing structures is not economical.

What will a "yes" vote on Proposition 3 mean to San Franciscans?

It will mean allocation of funds for construction of and equipment for research, teaching and patient care facilities at the UC Medical Center and San Francisco General Hospital.

If the bond issue passes, the probable distribution of funds over the next two years to UC San Francisco Medical Center will be $9,260,000. Here's what it will mean:

- Land and plans for a new school of dentistry.
- Laboratories for the Medical School, SF General Hospital.
- Construction of a new school of dentistry.
- Working drawings for Moffitt Hospital addition.

Bond issue funds will only be utilized to build hard-core educational facilities – classrooms, laboratories, libraries, other educational buildings essential to a university.

The State of California does NOT fund student housing, cafeterias, inter-collegiate athletic facilities or parking.

UC Medical Center schools take part in Health Fair

Schools of pharmacy, dentistry, nursing and medicine of UC Medical Center are participating in the first annual Health Fair held this month in Brooks Hall.

As four of 150 exhibitors at the event, the schools supported the aims of the fair – to help show people the way to better health through modern diagnostic techniques and preventive medicine and to help show young people the way to careers in the health field.

Among exhibits at the six-day event, open to the public free of charge, are demonstrations of a blood bank in operation, of an artificial kidney machine and a blood testing facility, of an electrocardiograph machine in operation and a complete intensive care unit.

The Health Fair, which celebrates the 100th birthday of the San Francisco Medical Society, is scheduled to run Oct. 22-27 noon to 9:30 p.m. daily, noon to 6 p.m. on Sunday. ◄